

26. A method according to claims 25, wherein the semiconductor film is an amorphous semiconductor film or a micro crystal semiconductor film.

27. A method according to claim 25, wherein the harmonic is one of second harmonic, third harmonic, and fourth harmonic.

28. A method for manufacturing a semiconductor device comprising the steps of:
forming an insulating film over a substrate;
forming a semiconductor film on the insulating film;
crystallizing the semiconductor film by irradiation of harmonic of a YVO_4 laser;

(1) patterning the crystallized semiconductor film to form a crystallized island-like semiconductor film; and

forming at least a channel region of a thin film transistor in the crystallized island-like semiconductor film,

wherein the insulating film comprises at least one material selected from the group consisting of silicon oxide, silicon oxynitride and silicon nitride.

29. A method according to claims 28, wherein the semiconductor film is an amorphous semiconductor film or a micro crystal semiconductor film.

30. A method according to claim 28, wherein the harmonic is one of second harmonic, third harmonic, and fourth harmonic.

31. A method for manufacturing a semiconductor device comprising the steps of:
forming a semiconductor film on an insulating surface;
providing a crystallization promoting material with the semiconductor film;
crystallizing the semiconductor film by irradiation of harmonic of a YVO_4 laser;

patterning the crystallized semiconductor film to form a crystallized island-like semiconductor film; and

forming at least a channel region of a thin film transistor in the crystallized island-like semiconductor film.

32. A method according to claims 31, wherein the semiconductor film is an amorphous semiconductor film or a micro crystal semiconductor film.

33. A method according to claim 31, wherein the harmonic is one of second harmonic, third harmonic, and fourth harmonic.

34. A method for manufacturing a semiconductor device comprising the steps of:
forming a semiconductor film on an insulating surface;
crystallizing the semiconductor film by irradiation of harmonic of a solid laser comprising Nd;
patterning the crystallized semiconductor film to form a crystallized island-like semiconductor film; and
forming at least a channel region of a thin film transistor in the crystallized island-like semiconductor film.

35. A method according to claims 34, wherein the semiconductor film is an amorphous semiconductor film or a micro crystal semiconductor film.

36. A method according to claim 34, wherein the harmonic is one of second harmonic, third harmonic, and fourth harmonic.

37. A method for manufacturing a semiconductor device comprising the steps of:
forming a semiconductor film on an insulating surface;
crystallizing the semiconductor film by irradiation of harmonic of a solid laser comprising Nd;
patterning the crystallized semiconductor film to form a crystallized island-like semiconductor film; and
forming at least a channel region of a thin film transistor in the crystallized island-like semiconductor film,

wherein the harmonic of the YVO_4 laser has a shape which has aspect ratio of 10 or more.

38. A method according to claims 37, wherein the semiconductor film is an amorphous semiconductor film or a micro crystal semiconductor film.

39. A method according to claim 37, wherein the harmonic is one of second harmonic, third harmonic, and fourth harmonic.

40. A method for manufacturing a semiconductor device comprising the steps of:
forming an insulating film over a substrate;
forming a semiconductor film over the insulating film;
crystallizing the semiconductor film by irradiation of harmonic of a solid laser comprising Nd;

patterning the crystallized semiconductor film to form a crystallized island-like semiconductor film; and

forming at least a channel region of a thin film transistor in the crystallized island-like semiconductor film,

wherein the insulating film comprises at least one material selected from the group consisting of silicon oxide, silicon nitride and silicon oxynitride.

41. A method according to claims 40, wherein the semiconductor film is an amorphous semiconductor film or a micro crystal semiconductor film.

42. A method according to claim 40, wherein the harmonic is one of second harmonic, third harmonic, and fourth harmonic.

43. A method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film on an insulating surface;

providing a crystallization promoting material with the semiconductor film;

crystallizing the semiconductor film by irradiation of harmonic of a solid laser comprising Nd;

patterning the crystallized semiconductor film to form a crystallized island-like semiconductor film; and

forming at least a channel region of a thin film transistor in the crystallized island-like semiconductor film.

44. A method according to claims 43, wherein the semiconductor film is an amorphous semiconductor film or a micro crystal semiconductor film.

45. A method according to claim 43, wherein the harmonic is one of second harmonic, third harmonic, and fourth harmonic.--
